

WHAT IS CLAIMED IS:

- 5 1. In a communication system comprising at least a first and second
simulcast station at a first remote site, a method comprising:
 detecting unavailability of the first simulcast station for communicating on
a first communication resource;
 determining if the second simulcast station is available for supporting
10 simulcast transmissions on the first communication resource, and
 if the second simulcast station is available, assigning the second simulcast
station to communicate on the first communication resource.
2. The method of claim 1 further comprising:
15 communicating, by the second simulcast station, simulcast messages on
the first communication resource.
3. The method of claim 2 wherein the steps of detecting, determining and
assigning are performed by a simulcast site controller.
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4. The method of claim 3 wherein the step of detecting is accomplished
by the simulcast site controller failing to receive a response to a message sent to
the first simulcast station.
- 25 5. The method of claim 3 wherein the communication system further
comprises a comparator adapted for sending data to be communicated over the
simulcast channel to one or more of the simulcast stations along with a timestamp
specifying when the data will be transmitted.

6. The method of claim 5 wherein the step of detecting is accomplished by the first simulcast station notifying the comparator of a malfunction and the comparator notifying the simulcast site controller of the malfunction.

5 7. The method of claim 5 wherein the step of detecting is accomplished by the comparator notifying the simulcast site controller of a failure of the comparator to receive a response from a message sent by the comparator to the first simulcast station.

10 8. The method of claim 5 wherein the communication system further comprises a plurality of simulcast stations distributed among a plurality of remote sites and where subset of the plurality of simulcast stations communicate on the first communication resource and wherein the controller, comparator and simulcast stations are connected by an Internet Protocol network and the simulcast
15 stations that communicate on the first communication resource share a multicast Internet Protocol address.

 9. The method of claim 8 wherein the step of assigning is accomplished by sending an Internet Protocol packet to the second simulcast station containing the
20 multicast Internet Protocol address of the simulcast stations that communicate on the first communication resource.

 10. The method of claim 8 further comprising the step of sending, by the simulcast site controller, an Internet Protocol packet instructing the first simulcast
25 station to shut down.

 11. The method of claim 5 wherein the unavailability of the first simulcast station is due to a problem with the connection between the first simulcast station and the comparator.

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12. The method of claim 3 wherein the communication system further comprises a third and fourth simulcast station at a second remote site, the method further comprising:

5 detecting, by the simulcast site controller, the unavailability of the third simulcast station communicating on the first communication resource at the second remote site;

determining, by the simulcast site controller, if the fourth simulcast station is available for supporting simulcast communication on the first communication resource and, if the fourth simulcast station is available;

10 assigning, by the simulcast site controller, the fourth simulcast station to communicate on the first communication resource; and

communicating, by the fourth simulcast station, simulcast messages on the first communication resource.

15 13. The method of claim 1 wherein the unavailability of the first simulcast station is due to a malfunction of the first simulcast station.

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14. In a wireless communication system employing simulcast communication, a method for initiating simulcast communication in a simulcast site, the simulcast site comprising a plurality of remote sites, the method comprising:
- 5 determining availability of a plurality of simulcast stations located at the plurality of remote sites;
- assigning, by a simulcast site controller, members of a first simulcast channel, the members comprising respective first-available simulcast stations at each of the remote sites; and
- 10 performing simulcast communication using the first simulcast channel.
15. The method of claim 14 wherein the first simulcast channel is used for communication of control information.
- 15 16. The method of claim 14 further comprising:
- assigning, by the simulcast site controller, members of a second simulcast channel, the members comprising respective second-available simulcast stations at each of the remote sites; and
- commencing simulcast communication using the second simulcast
- 20 channel.
17. The method of claim 16 wherein the second simulcast channel is a payload channel.
- 25 18. In a communication system employing simulcast transmissions by a simulcast site, the simulcast site comprising a simulcast site controller and a plurality of remote sites, each remote site having a plurality of simulcast stations, a method comprising:

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detecting, by the simulcast site controller, unavailability of a first
simulcast station of the plurality of simulcast station at a first remote site of the
plurality of remote sites for communicating on a first communication resource;

5 determining, by the simulcast site controller, if there is a second simulcast
station of the plurality of simulcast stations at the first site that is available for
supporting simulcast transmissions on the first communication resource, and if the
second simulcast station is available;

assigning, by the simulcast site controller, the second simulcast station to
communicate on the first communication resource.

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19. The method of claim 18 further comprising:

communicating, by the second simulcast station, simulcast messages on
the first communication resource.

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